

## BEAVER MEADOW RESERVOIR



### Introduction

Beaver Meadows Reservoir is an intermediate size reservoir on the north slope of the Uintas. It has a small, natural watershed and provides limited summer recreational opportunities.

Beaver Meadows Reservoir was created in 1949 by the construction of an earth-fill dam. The dam was modified in 1985 to increase storage capacity. The

reservoir shoreline is owned by the Wasatch National Forest, and public access is unrestricted. Reservoir water is used primarily for agriculture. Water is used to irrigate

### Characteristics and Morphometry

Lake elevation (meters / feet)	2,861 / 9,385
Surface area (hectares / acres)	49.4 / 122
Watershed area (hectares / acres)	2,807 / 6,935
Volume (m <sup>3</sup> / acre-feet)	
capacity	2,657,115 / 2,155
conservation pool	0 / 0
Annual inflow (m <sup>3</sup> / acre-feet)	9,864,000 / 8,000
Retention time (years)	<1
Drawdown (m <sup>3</sup> / acre-feet)	2,657,115 / 2155
Depth (meters / feet)	
maximum	11.1 / 37
mean	5.3 / 17.7
Length (meters / feet)	480 / 1,600
Width (meters / feet)	210 / 700
Shoreline (meters / feet)	1530 / 5100

### Location

County	Summit
Longitude / Latitude	110 03 7 / 40 54 3
USGS Map	Hoop Lake, UT/WY, 1967
DeLorme's Utah Atlas & Gazetteer™	Page 56, A-1
Cataloging Unl	Upper Green-Flaming Gorge (14040106)

approximately 2035 acres of cropland and some stock watering. The reservoir receives water primarily from two perennial springs with a combined flow of approximately 2.5 cfs and spring runoff from the upstream watershed. There is no conservation pool for the reservoir and the water level may be drawn completely down by the end of the irrigation season. Water use is not expected to change in the foreseeable future.

### Recreation

Beaver Meadow Reservoir is easily accessible from US-43 south via gravel road from McKinnon, Wyoming.

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Travel due south on a county road from McKinnon approximately 7 miles to the Wasatch National Forest. This road becomes FS-221. Continue south for 2 more miles and turn right on FS-058. Proceed west for approximately 4.5 miles to the reservoir. An alternate route would be to continue on FS-058 past Hoop Lake to Beaver Meadow Reservoir (approximately 5 miles).

Hunting, boating, swimming, camping, picnicking, and hiking are all popular. Although DWR currently does not manage the reservoir for a fishery, fishing does occur. There are reports that a fishery is present which may consist of native species from limited introductions in the past. While there are no boatramps, it is generally possible to get a small boat on the reservoir.

There are no recreational facilities at the reservoir however, the area is popular for primitive camping around the reservoir. There are improved camping areas in the area.

### Watershed Description

Beaver Meadow Reservoir is located on the northern slope of the High Uintas. The watershed consists entirely of alpine meadows, coniferous forests and alpine tundra. The watershed area extends approximately 6 miles to the south up steep and moderately steep terrain climbing nearly 3,000 vertical feet. The slopes surrounding the reservoir are not particularly steep (<15%). The reservoir is an impoundment of a meadow on Lost Creek a tributary to Burnt Fork Creek. The watershed high point, an unnamed peak six miles south, is 3,672 m (12,240 ft) above sea level, thereby developing a complex slope of 9% to the reservoir. The average stream gradient of Lost Creek is 6.1% (322 feet per mile). The inflow and outflow is Lost Creek. There are also two unnamed streams a two springs flowing into the reservoir. The springs according to the irrigation company, who manages the water, have a combined flow of 2.5 cfs.

The watershed is made up of high mountains and mountains meadows. The soil associations that compose the watershed are listed in Appendix III.

The vegetation communities consist of spruce-fir, oak, maple, pine, aspen and grassy meadows. The watershed receives 64 - 76 cm (25 - 30 inches) of precipitation annually. The frost-free season around the reservoir is 0 - 20 days per year.

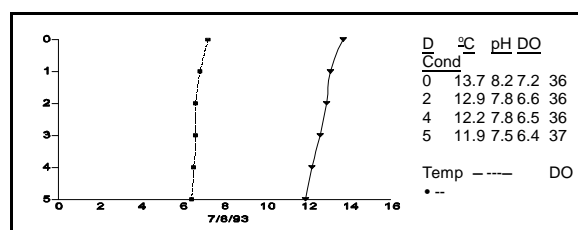
Land use in the watershed is 100% multiple use, with grazing, timber harvest and recreation being the primary uses. There are active or proposed timber sales in the area.

### Limnological Assessment

The water quality of Beaver Meadow Reservoir is

Limnological Data		
Data sampled from STORET site: 593833		
Surface Data	1981	1993
Trophic Status	-	M
Chlorophyll TSI	-	30.60
Secchi Depth TSI	-	62.34
Phosphorous TSI	-	45.00
Average TSI	-	45.98
Chlorophyll <i>a</i> (ug/L)	-	1
Transparency (m)	-	0.85
Total Phosphorous (ug/L)	-	17
pH	-	8.5
Total Susp. Solids (mg/L)	-	<3
Total Volatile Solids (mg/L)	-	<3
Total Residual Solids (mg/L)	-	<3
Temperature (°C / °f)	-	11/52
Conductivity (umhos.cm)	-	36.5
Water Column Data		
Ammonia (mg/L)	-	0.03
Nitrate/Nitrite (mg/L)	-	0.0186
Hardness (mg/L)	-	12.15
Alkalinity (mg/L)	-	12.0
Silica (mg/L)	-	-
Total Phosphorous (ug/L)	-	23
Miscellaneous Data		
DO (Mg/l) at 75% depth	-	6.5
Stratification (m)	-	N
Limiting Nutrient	-	N
Depth at Deepest Site (m)	-	5

very good. It is considered to be very soft with a hardness concentration range of 12-16 mg/L (CaCO<sub>3</sub>). Although the data is limited, currently no none of the parameters monitored have exceeded State water quality standards for defined beneficial uses. The data available indicates



that the reservoir is a nitrogen limited system with low productivity. Overall it appears that the reservoir is mesotrophic. It appears that the transparency may be

## LAKE REPORTS

artificially high from turbidity due to the shallow nature of the reservoir. As additional data is obtained, a better understanding of the trophic state of the reservoir will be established. In addition the reservoir because of its shallow nature probably does not develop a strong thermocline indicative of a stratified reservoir.

Currently DWR maintains no stocked fishery in the reservoir. The reservoir has not been chemically treated by the DWR, so populations of native fishes may be present in the lake. There are reported populations of fish present.

Phytoplankton data obtained on September 16, 1993 include the following taxa (in order of dominance)

Species	Cell Volume (mm <sup>3</sup> /liter)	% Density By Volume
Quadrigula lacustris	1.112	75.74
Euastrum sp.	0.311	21.21
Pennate diatoms	0.031	2.12
Ankistrodesmus falcatus	0.009	0.59
Ankyra judayi	0.003	0.19
Chlamydomonas sp.	0.002	0.15
Total Cell Volume	1.468	
Shannon-Weaver Index	0.67	
Evenness	0.38	
Richness	0.25	

The phytoplankton community is dominated by the presence of green algae and diatoms indicative of fairly good water quality with low to moderate productivity. Pollution Assessment

Nonpoint pollution sources include the following: Sedimentation and nutrient loading from grazing and other activities; litter, human waste and chemicals from recreation; and grazing throughout the watershed and in the vicinity of the reservoir.

There are no point sources of pollution in the watershed.

### Beneficial Use Assessment

The reservoir is not currently classified by the State but it is being proposed that the following protection classes be implemented: boating and similar recreation (excluding swimming) (2B), cold water game fish and organisms in their food chain (3A) and agricultural uses (4).

### Information

#### Management Agencies

Uinta Basin Association of Governments	722-4518
Division of Wildlife Resources	538-4700
Division of Water Quality	538-6146
Wasatch National Forest	524-5030
Mountain View Ranger District	(307) 782-6555

#### Recreation

Dinosaurland Travel Region (Vernal)	789-6932
Vernal Chamber of Commerce	789-1352

#### Reservoir Administrators

Division of Wildlife Resources	538-4700
Interstate Irrigation and Res Co.	(307) 784-3281